

इंटरनेट

मानक

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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

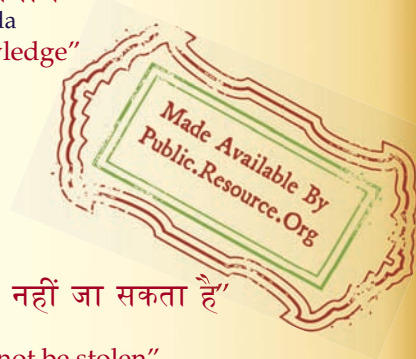
IS 5290 (1993, Reaffirmed 2008): Landing
Valves--Specification (Third Revision). UDC 621.646.2 :
614.843.3



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

IS 5290 : 1993
(Reaffirmed 2008)

भारतीय मानक
लैंडिंग वाल्व — विशिष्टि
(तीसरा पुनरीक्षण)

Indian Standard
LANDING VALVES — SPECIFICATION
(Third Revision)

First Reprint DECEMBER 2010
(Including Amendments No. 1, 2, 3, 4, 5 & 6)

UDC 621.646.2 : 614.843.3

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

November 1993

Price Group 4

FOREWORD

This Indian Standard (Third Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Fire Fighting Sectional Committee had been approved by the Civil Engineering Division Council.

The landing valves are sometimes also referred to as internal hydrants because these are usually fitted inside the buildings for wet hydrant system. These are primarily intended for being installed at the staircase landing at each floor level, from where fire-hose could be laid out by the fire brigade or trained men for fighting fire on the concerned floor. Because of this, the design of these valves has to be compact so as not to cause any obstruction to the passage where these may be installed.

Landing valves may be installed in different ways and altitudes and for yielding varying output of water, requiring different shape and sizes. Two types which are mostly used have been covered in this standard. The landing valves when used for sea water should not be made of aluminium alloy.

This standard was first published in 1969 and revised subsequently in 1977 and 1983. This revision has been prepared in order to update the provisions of the standard which has been done for incorporating the amendments and modified figures.

The composition of committee responsible for the preparation of this standard is given in Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (revised)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

AMENDMENT NO. 1 JUNE 1994
TO
IS 5290 : 1993 LANDING VALVES — SPECIFICATION
(Third Revision)

(Page 2, clause 4.1.1, line 4) — Read '04Cr17Ni12MO₂' for '04Cr17NiMO₂'.

(Page 3, clause 7.2, line 2) — Read '2.1 MN/m²' for '2.1 MN/mm²'.

(CED 22)

AMENDMENT NO. 2 AUGUST 1999
TO
IS 5290 : 1993 LANDING VALVES — SPECIFICATION
(Third Revision)

[Page 2, clause 4.1.1 (see also Amendment No. 1)] — Substitute 'Grade 1 and 4 of IS 3444 : 1987' for '04Cr17Ni12MO2 conforming to IS 6529 : 1972'.

(Page 2, clause 4.4) — Substitute 'seat valve' for 'gaskets'.

(Page 2, clause 5.2.1) — Substitute the following for the existing clause:

'5.2.1 Tooth, seat valve shall be forged from forged brass material conforming to grade FLB of IS 6912 : 1985 or IS 291 : 1989. Blank cap shall be of ABS plastics.'

(Page 5, Annex A) — Insert the following at appropriate places:

'IS 291 : 1989 Naval brass rods and sections for machining purposes.'

'IS 3444 : 1987 Corrosion resistant alloy steel and nickel base castings for general applications.'

(CED 22)

AMENDMENT NO. 3 FEBRUARY 2001
TO
IS 5290 : 1993 LANDING VALVES — SPECIFICATION

(Page 2, clause 4.1):

a) Delete 'valve body' from first line.

b) Insert the following at the end of clause:

“Valve body shall be conforming to IS 3444 : 1987 ‘Corrosion resistant alloy steel and nickel base castings for general applications’.”

(Page 2, clause 4.1.1) — Substitute ‘Grade 1 and 4 of IS 3444 : 1987’ for ‘04Cr17Ni12MO₂ conforming to IS 6529 : 1972’.

(Page 2, clause 4.4) — Substitute ‘seat valve’ for ‘gaskets’.

(Page 2, clause 5.2.1) — Substitute the following for the existing clause:

‘Tooth, seat valve shall be forged from forged brass material conforming to Grade FLB of IS 6912 : 1985 or IS 291 : 1989, Blank cap shall be of ABS plastics.’

(Page 5, Annex A) — Insert the following at the appropriate place:

‘IS 291 : 1989 Naval brass rods and sections for machining purposes.

‘IS 3444 : 1987 Corrosion resistant alloy steel and nickel brass castings for general applications’

(CED 22)

AMENDMENT NO. 4 OCTOBER 2002
TO
IS 5290 : 1993 LANDING VALVES — SPECIFICATION
(Third Revision)

[Page 2, clause 4.1, line 1 (see also Amendment No. 3)] — Insert the following in the beginning:

‘The valve body’

(Page 2, clause 4.1, line 7) — Delete ‘and zinc alloy’.

(CED 22)

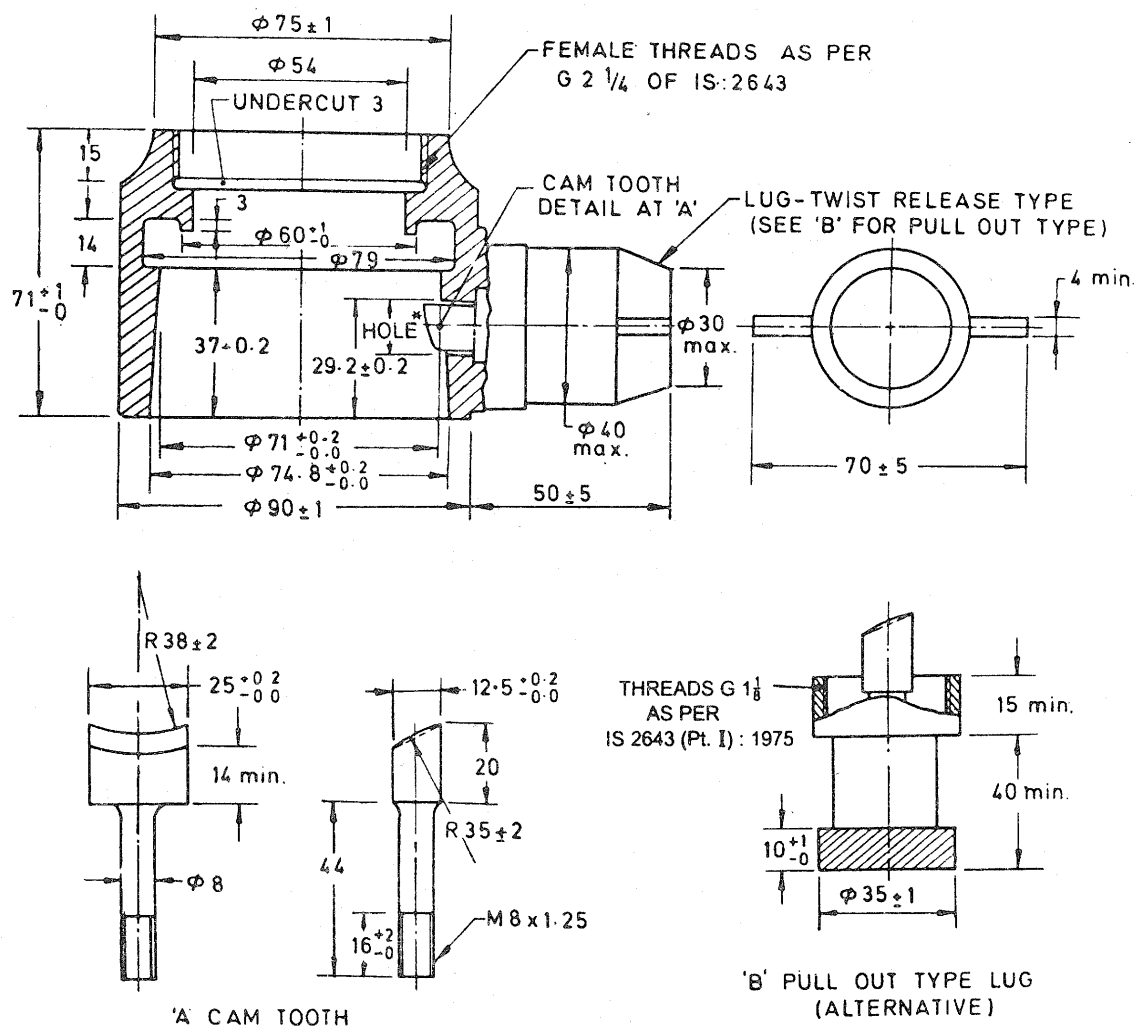
AMENDMENT NO. 5 MAY 2005
TO
IS 5290 : 1993 LANDING VALVES — SPECIFICATION
(Third Revision)

[Page 2, clause 4.1 (see also Amendments No. 3 and 4)] — Substitute the following for the existing:

'The valve body, bonnet, stop valve, check nut, instantaneous female outlet and blank cap shall be made either of leaded-tin-bronze conforming to Grade LTB 2 of IS 318 or aluminium alloy conforming to IS Designation 4225, 4450 and 4600 of IS 617 or stainless steel Grade 1 and 4 of IS 3444. All aluminium and zinc alloy shall be of die casting only.'

(Page 2, clause 4.4) — Substitute 'seat washer' for 'gaskets'.

(Page 3, Fig. 3) — Substitute the following figure for the existing:



(CED 22)

AMENDMENT NO. 6 MAY 2006
TO
IS 5290 : 1993 LANDING VALVES — SPECIFICATION
(Third Revision)

[*Page 2, clause 4.1 (see also Amendments No. 3 and 4)*] — Add the following at the end of clause:

‘Blank cap may be of ABS plastic’.

(CED 22)

Indian Standard

LANDING VALVES — SPECIFICATION

(Third Revision)

1 SCOPE

This standard lays down the requirements regarding materials, shape, dimensions, and performance requirements of two types of landing valves.

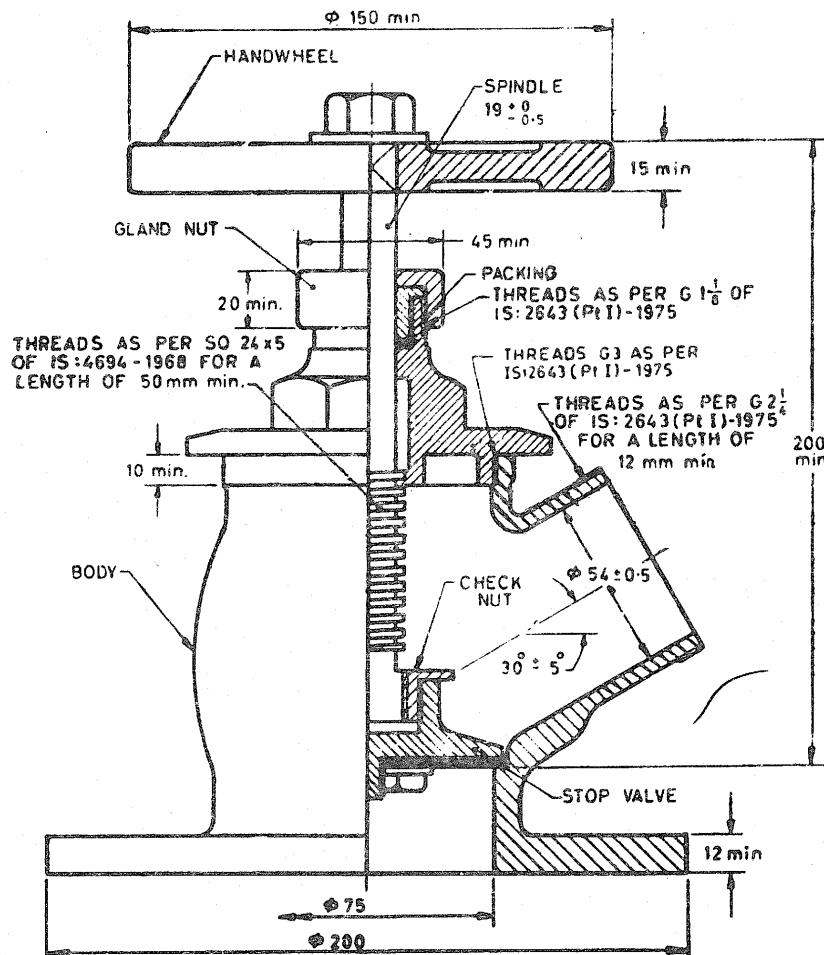
2 REFERENCES

The Indian Standards listed in Annex A are necessary adjuncts to this standard.

3 GENERAL

The landing valves assembly shall consist of valve(s) (see Fig. 1 and 2), instantaneous female outlet(s) (see Fig. 3) and blank cap(s) (see Fig. 4).

NOTE — The instantaneous female outlets may also be manufactured as a part of landing valves.



NOTES

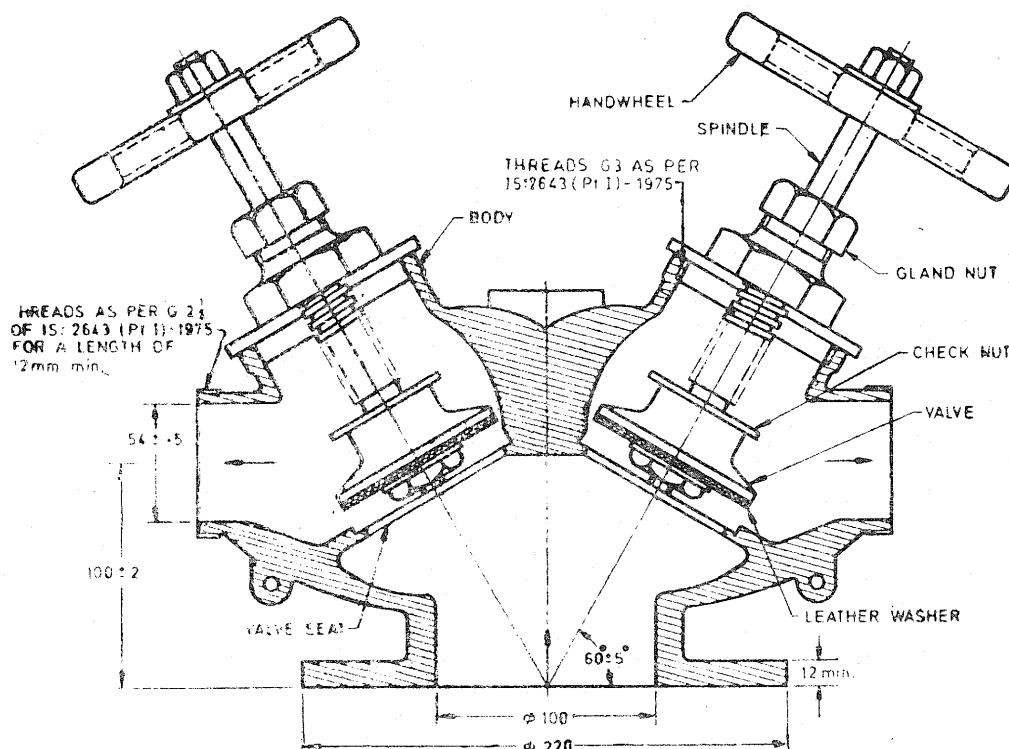
1 Outlet is fixed with instantaneous female coupling with blank cap (see Fig. 3 and 4).

2 Tolerance where not specified shall be ± 0.5 mm.

3 Pre-circle diameter of flange shall match with respective diameter of pipe that is, 75 mm and 100 mm respectively.

All dimensions in millimetres.

FIG. 1 LANDING VALVE SINGLE OUTLET (TYPE A)



NOTES

- 1 Both outlets are fixed with instantaneous female coupling with blank caps (see Fig. 3 and 4).
- 2 Dimensions of the component parts, that is, handwheel, spindle and other attachments are same as in Fig. 1.
- 3 Tolerance where not specified shall be ± 0.5 mm.

All dimensions in millimetres.

FIG. 2 LANDING VALVE DOUBLE HEAD OUTLET (TYPE B)

4 MATERIALS

4.1 The valve body, bonnet, stop valve, check nut, instantaneous female outlet and blank cap shall be made either of leaded-tin-bronze conforming to Grade LTB-2 of IS 318 : 1981 or aluminium alloy conforming to IS designation 4225, 4450 and 4600 of IS 617 : 1975. All aluminium and zinc alloy shall be of die casting only.

4.1.1 Zinc-aluminium alloy (copper 0.5 to 1.5 percent, aluminium 10.5 to 11.5 percent, magnesium 0.015 to 0.03 percent and balance zinc) or stainless steel designation 04Cr17NiMO₂ conforming to IS 6529 : 1972. All aluminium and zinc alloy shall be of die casting only.

4.2 The valve spindle shall be made of brass rod conforming to IS 320 : 1980 or IS 319 : 1989 for use with body of leaded-tin-bronze and of stainless steel conforming to IS 6603 : 1972 for use with body of aluminium or zinc alloy or stainless steel.

4.3 The handwheel shall be made of mild steel conforming to IS 1030 : 1989 or cast iron conforming to IS 210 : 1978.

4.4 Washers, gaskets shall be made of rubber conforming to IS 937 : 1981 or leather conforming to IS 581 : 1976. Gland packing shall be of asbestos thread conforming to IS 4687 : 1980.

4.5 The spring shall be of phosphor wire conforming to IS 7608 : 1987 for copper alloy landing valve and stainless steel wire conforming to IS 6528 : 1972 for aluminium alloy, zinc alloy and stainless steel landing valves.

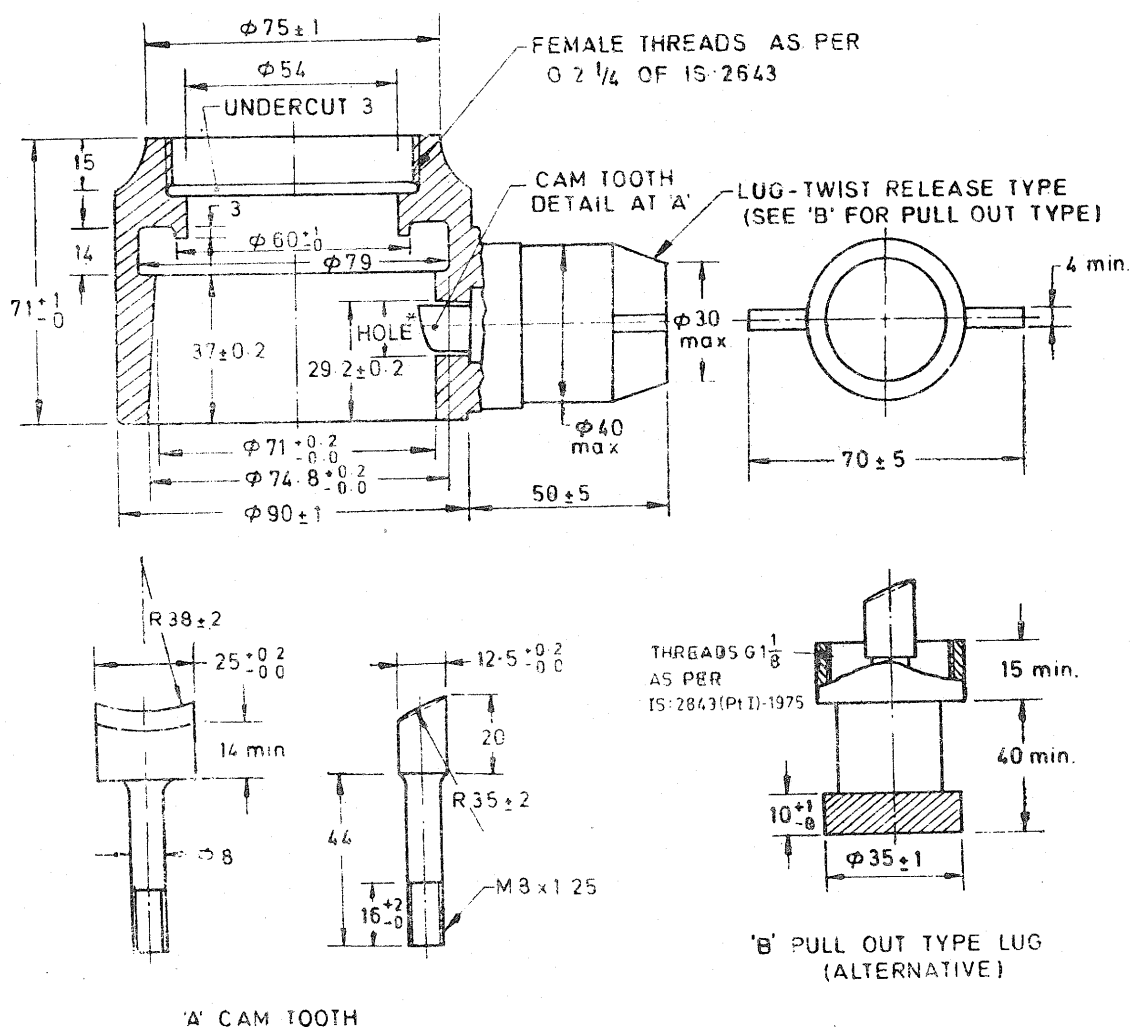
5 TYPES AND DIMENSIONS

5.1 The landing valves shall be of two types as under:

- a) Type A — Landing valve single outlet (see Fig. 1).
- b) Type B — Landing valve double head with double outlet (see Fig. 2).

5.2 The shape and dimensions of each type are given in Fig. 1 to 4.

5.2.1 Tooth shall be forged from forged brass material conforming to grade FLB of IS 6912 : 1985.



*Rectangular Hole $12.8^{+0.2}_{-0.0} \times 25.4^{+0.2}_{-0.0}$

NOTES

- 1 The tolerance where not specified shall be ± 0.5 mm.
- 2 The lug may also be the part of the main body.

All dimensions in millimetres.

FIG. 3 INSTANTANEOUS FEMALE OUTLET

6 FINISH

6.1 All parts shall be of good finish, clear of burrs and sharp edges. All castings shall be of clean and sound and shall be free from plugging, welding or repair of any defects.

6.2 The valve top except the face of the flange and the instantaneous outlet shall be painted fire red of shade No. 536 of IS 5 : 1978. The outside of instantaneous outlet shall be highly polished. The handwheel shall be painted black. Paints shall conform to IS 2932 : 1974.

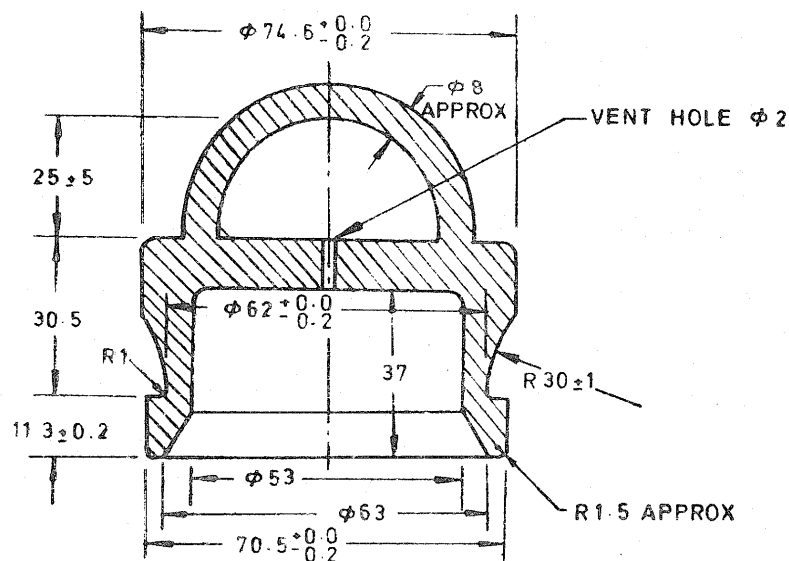
7 PERFORMANCE REQUIREMENTS

7.1 Water Tightness Test for the Valve

The stop valve shall be fully closed by screwing down the spindle. A hydrostatic pressure of 1.4 MN/m^2 (14 kgf/cm^2) shall then be applied to each valve on its inlet side. There shall be no leakage through the valve and its seat.

7.2 Hydrostatic Pressure Test

Each assembled unit shall be subjected to a hydrostatic pressure of 2.1 MN/mm^2 (21 kgf/cm^2) with the valve open and outlet closed for



NOTE — The tolerances where not specified shall be ± 0.5 mm.

All dimensions in millimetres.

FIG. 4 BLANK CAP

a period of $2\frac{1}{2}$ minutes for the purpose of locating porosity in the casting. When so tested, it shall not fail or show any sign of leakage either through the valve body or through the gland of the spindle.

NOTE — During the hydrostatic pressure test, the initial drops of water should be allowed up to the period of proper rubber sealing with the male blank cap.

7.3 Flow Test

Water shall be discharged through the valve assembly and its flow shall be measured using a flow meter or V-notch. The flow shall be not less than 900 litres per minute at 0.7 MN/m^2 (7 kgf/cm^2) for Type A and 1 800 litres per minute at 0.7 MN/m^2 (7 kgf/cm^2) for Type B provided the feed to the valves, for the purpose of this test, is not less than these figures. It shall be a type test.

8 MARKING

8.1 Each assembled valve shall be clearly and permanently marked on the valve body, as follows:

- Manufacturer's name or trade-mark,
- Code letter indicating the type of valve (inscribing type of instantaneous female outlet), and
- Year of manufacture.

8.1.1 BIS Certification Marking

The valve assembly may also be marked with the Standard Mark. Details are available with the Bureau of Indian Standards.

ANNEX A
(Clause 2)

LIST OF REFERRED INDIAN STANDARDS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
5 : 1978	Colours for ready mixed paints and enamels (<i>third revision</i>)	1030 : 1989	Specification for carbon steel castings for general engineering purposes (<i>fourth revision</i>)
210 : 1978	Specification for grey iron castings (<i>third revision</i>)	2643 (Part 1) : 1975	Dimensions for pipe threads for fastening purposes: Part 1 Basic profile and dimensions (<i>first revision</i>)
318 : 1981	Specification for leaded-tin-bronze ingots and castings (<i>second revision</i>)	2932 : 1974	Specification for enamel, synthetic, exterior (a) undercoating, (b) finishing (<i>first revision</i>)
319 : 1989	Specification for free cutting brass bars, rods and sections (<i>fourth revision</i>)	4687 : 1980	Specification for gland packing asbestos (<i>first revision</i>)
320 : 1980	Specification for high tensile brass rods and sections (other than forgings stock) (<i>second revision</i>)	6528 : 1972	Specification for stainless steel wire
581 : 1976	Specification for vegetable tanned hydraulic leather (<i>second revision</i>)	6529 : 1972	Specification for stainless steel blooms, billets and slabs for forging
617 : 1975	Specification for aluminium and aluminium alloy ingots and castings for general engineering purposes (<i>second revision</i>)	6603 : 1972	Specification for stainless steel bars and flats
		6912 : 1985	Specification for copper and copper alloy forgings stock and forgings (<i>first revision</i>)
937 : 1981	Specification for washers for water fittings for fire fighting purposes (<i>second revision</i>)	7608 : 1987	Specification for phosphor bronze wire for general engineering purposes (<i>first revision</i>)

ANNEX B

(Foreword)

COMMITTEE COMPOSITION

Fire Fighting Sectional Committee, CED 22

<i>Chairman</i>	<i>Representing</i>
FIRE ADVISER	Ministry of Home Affairs
<i>Members</i>	
ASSISTANT INSPECTOR GENERAL (RPSF)	Ministry of Railways
ASSISTANT SECURITY OFFICER (Alternate)	Tariff Advisory Committee, Madras
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SHRI B. L. CHOUDHRY	Eureka Firetech Pvt Ltd, Bombay
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SHRI S. M. DESAI	Municipal Corporation of Delhi, Delhi
SHRI D. P. DHATRAK	Bhabha Atomic Research Centre (Fire Service), Bombay
SHRI S. K. DHARI	Home Department (Fire Service), Government of Tamil Nadu
SHRI R. C. SHARMA (Alternate)	National Airport Authority, New Delhi
SHRI RAMESH R. DHOBLAY	Home (Police Department), Government of Andhra Pradesh, Hyderabad
DIRECTOR	In personal capacity (J-1916 Chitranganj Park, New Delhi)
DEPUTY DIRECTOR (Alternate)	CPWD (Electrical), New Delhi
DIRECTOR OF EQUIPMENT	Steelage Industries Ltd (Minimax Division), Bombay
SENIOR FIRE OFFICER (Alternate)	Ministry of Defence (DIFR)
DIRECTOR GENERAL OF FIRE SERVICE	Jaya Shree Textiles & Industries, Rishra
DEPUTY DIRECTOR (Alternate)	Municipal Corporation of Greater Bombay (Bombay Fire Brigade), Bombay
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SHRI C. P. GOSAIN	Avon Services (Production and Agencies) Pvt Ltd, Bombay
SHRI J. S. JAMSHEDJI	In personal capacity (C-231 Samashar Apartments, Mayur Vihar, Phase I, New Delhi)
SHRI C. GNANRAJ (Alternate)	Steel Authority of India (Bokaro Steel Plant), New Delhi
MAJ GEN B. S. KATARIA	Central Industrial Security Force, Ministry of Home Affairs
SHRI A. K. SURI (Alternate)	West Bengal Fire Services, Calcutta
SHRI P. KHANNA	The Institution of Fire Engineers (India), New Delhi
SHRI D. J. KULKARNI	Ministry of Defence (DGI)
SHRI S. N. KUNDU	Vijay Fire Protection Systems Pvt Ltd, Bombay
MANAGING DIRECTOR	Directorate General of Technical Development, New Delhi
TECHNICAL EXECUTIVE (Alternate)	Kooverji Devshi & Co Pvt Ltd, Bombay
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SHRI R. K. MISRA	Mathar & Platt (India) Ltd, Bombay
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SHRI P. N. PANCHAL	Central Building Research Institute (CSIR), Roorkee
ASSISTANT INSPECTOR GENERAL (FIRE)	Metallurgical & Engineering Consultants (India) Ltd, Ranchi
(Alternate)	Surex Production & Sales Pvt Ltd, Calcutta
SHRI B. PATHAK	Tariff Advisory Committee, Bombay
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Director (Civ Engg)	

Secretary

SHRI HEMANT KUMAR
Joint Director (Civil Engg), BIS

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Water Fitting for Fire Fighting Purposes Subcommittee, CED 22 : 1

Concener
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Tariff Advisory Committee, Madras

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Ministry of Home Affairs, New Delhi
Chhatriya Rubber & Chemical Industries, Bombay

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Bombay
The Institution of Fire Engineers (India), New Delhi

Directorate of Standardization, Ministry of Defence, New Delhi

Engineers India Ltd, New Delhi

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Kooverji Devshi & Co Pvt Ltd, Bombay

Newage Industries, Surender Nagar, Gujarat

Devraj Engineers, Ahmadabad

Mather & Platt India Ltd, Bombay

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